PRELIMINARY ANALYSIS OF NASA COMMERCIALIZATION INITIATIVES

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The Congress of the United States
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PREFACE

David H. Moore of the Congressional Budget Office's Natural Resources and Commerce Division, and Michael Sieverts of the Budget Analysis Division, prepared this memorandum. It was undertaken in response to a request from the Commerce, Science, and Transportation Subcommittee on Science, Technology and Space. The memorandum provides a preliminary analysis of several commercialization proposals in the 1990 budget request of the National Aeronautic and Space Administration. Francis Pierce edited the memorandum. Margaret Cromartie prepared the many drafts.

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CONGRESSIONAL BUDGET OFFICE
STAFF **MEMORANDUM**

PRELIMINARY ANALYSIS OF NASA COMMERCIALIZATION INITIATIVES

This memorandum analyzes several proposals to "commercialize" various parts of the National Aeronautics and Space Administration (NASA) program. The conclusions drawn in the memorandum are tentative, and will be revisited in a Congressional Budget Office (CBO) special study to be completed during the spring of 1989.

The seven specific commercialization proposals in NASA's 1990 budget request all seek to draw private capital into the development of the nation's space infrastructure, in exchange for long-term government commitments in the form of leases or service contracts. NASA is currently soliciting private-sector interest in its proposals, and no specific terms have been presented to the Congress. NASA has indicated that the federal government would enjoy savings, relative to direct procurement, if non-U.S. government customers shared with NASA the use and cost, including the higher capital costs, of the privately financed facilities. The recent history of space commercialization does not give cause for optimism that customers other than the U.S. government will share the cost and use of the facilities. Specifically, there is not likely to be any demand from sources outside the U.S. government for three of the seven proposed projects: the space station flight telerobotic system, the advanced solid rocket motor plant, and the observational instruments laboratory.

This weakness of the potential non-U.S. government demand for the facilities and hardware proposed for commercialization could leave NASA without private offers that accept the risk of even a low level of shared use and cost. In this circumstance, the cost of private financing would be greater than the cost of direct procurement. If the commercialization initiatives were permitted to go forward, even though they were likely to be more expensive than direct procurement, it would be reasonable for the Congress to expect some additional benefit to the nation in return for the additional cost incurred through private financing. NASA has alluded to additional benefits, without being specific as to what they might be.

NASA has acknowledged that its proposals will shift budgetary outlays from fiscal years 1990 and 1991 into the future--as much as $110 million in 1990 alone. NASA represents this shift as desirable because it views its current and proposed budgets as barely adequate to cover the cost of the space program. NASA received a 21 percent increase in its appropriation for 1989, and the 1990 budget request includes another 22 percent increase, largely to cover the cost of the space shuttle and space station programs. The 1990 budget request indicates that large future increases will also be required by NASA, and that NASA and the Office of

Management and Budget (OMB) will continue to explore commercialization options deferring outlays into the future. Whether or not proposals of this type would ultimately cost the government more than direct procurement, the practice of shifting outlays into the future, if extensively adopted, would saddle NASA with a substantial mortgage payment.

The budgetary treatment of NASA lease or service contract payments is uncertain, because NASA has yet to submit draft legislation to the Congress. In general, the government is required by the Anti-Deficiency Act (31 USC 1341) to provide funding to cover its current liabilities. Unless an exception was made, the appropriations necessary for these initiatives might be roughly comparable to those needed for direct procurement, in which case NASA would not decrease its near-term budget authority requirement.

If the private sector responds to the commercialization initiatives with offers that allow the government to reduce its costs, this will be consistent with the Administration's broader policy of promoting commercial space activity through the cost-effective purchase of goods and services from the private sector. Yet, even in this circumstance, NASA's proposals might require an exception to normal scorekeeping procedures, setting an undesirable precedent for other agencies and departments. Moreover, the current proposals, and others to come, might encumber both NASA and future Congresses with mandatory payments for programs and projects that are at the mercy of inherently unpredictable events.

I. BACKGROUND

President Reagan's 1990 budget request for the National Aeronautics and Space Administration includes "space commercialization" as a major policy initiative.[1] President Bush explicitly endorsed this initiative in Building a Better America.[2] The Administration thrust is consistent with initiatives released during 1988 that called for increased private-sector participation in the national civilian space program.[3] The NASA budget request includes support for industry and university collaboration in exploring "the potential uses of space for future economic gain" and for procurement of launch services from the private sector for NASA missions, and announces NASA's intention to seek private-sector financing for portions of its space transportation and space station programs.[4]

The intention to seek private financing for NASA facilities and hardware programs represents a new direction for the NASA program. It would defer some budgetary outlays to the future by means of service contracts and leases to private investors. A complete analysis of these space commercialization initiatives must await more specific information concerning the proposed agreements between the government and private investors, since a variety of options would be open to both parties. Nevertheless, the initiatives included in the 1990 budget raise a number of general issues. This memorandum addresses some of these issues in examining the larger policy behind the proposals, estimating their cost to the government, and briefly examining some budgetary and scoring concerns.

II. THE POLICY OF SPACE COMMERCIALIZATION

In February 1988, NASA released the broad outlines of a long-awaited National Space Policy, a set of commercial initiatives including both general policy statements and specific program proposals. These statements comprise the policy underlying the 1990 budget initiatives, and are explicitly referred to by NASA in its presentation of the Administration's 1990 budget request.[5]

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1. Budget of the United States. Fiscal Year 1990: Major Policy Initiatives. p. 46.

2. Building a Better America (The White House), February 9, 1989, p.35.

3. Congressional Research Service, Civilian Space Policy Under the Reagan Administration: Potential Impact of the January 1988 Directive. Report No. 88-237(March 1988),pp 15-18.

4. Budget of the United States. Fiscal Year 1990: Major Policy Initiatives. p. 45.

5. National Aeronautics and Space Administration, Budget Estimates. Fiscal Year 1990 (January 1989).

The National Space Policy is fully articulated in a classified National Security Decision Directive prepared by the National Security Council in January 1988. An unclassified summary, released in February 1988, placed new emphasis on a private-sector role in the national civilian space program, asserting that a "non-governmental Commercial Space Sector," driven by market forces, would generate economic benefits for the nation and support the public-sector space effort by "increasing the range of space goods and services."[6] The major policy initiatives intended to promote the commercial space sector were prepared by an interagency group consisting of NASA and the Departments of Defense, Commerce and Transportation, designated as the Commercial Space Working Group of the Economic Policy Council.[7]

The space policy directive provides for government actions to encourage a market-driven commercial space sector, and prohibits other government actions that could discourage private-sector involvement in space. It calls for government procurement of "commercially available" space goods and services "to the fullest extent feasible" as the principal new means of stimulating private-sector investment, ownership, and operation. Commercial availability is defined to include services currently on the market--for example, launch services--and other services that "could be supplied commercially in response to a government service procurement request." Feasibility requires that the services procured meet a mission requirement "in a cost effective way." The government would be prohibited from competing with the private sector in markets where commercial space services are provided. The Space Station, NASA's major development project for the 1990s, is singled out as a program where the possibility of space commercial activity is to be explored by both NASA and OMB: "NASA will seek to rely to the extent feasible on private sector design, financing, construction, and operation of future Space Station requirements...."[8]

III. COMMERCIALIZATION PROPOSALS IN THE 1990 BUDGET

NASA is pursuing private financing for seven specific projects. Four are construction projects, and the other three are development projects with specific hardware objectives. The budget also proposes exploration of private financing options for additional space station systems and equipment, including a solar dynamic power system. A supporting document, Major Policy Initiatives, also indicates that a leasing

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6. "Fact Sheet: National Space Policy" (The White House), February 11,1988.

7. Congressional Research Service, Civilian Space Policy under the Reagan Administration, p. 16.

8. "Fact Sheet: National Space Policy."

arrangement will be pursued for the Commercially Developed Space Facility, a small privately owned and operated space station to be launched and periodically visited by the space shuttle and its crew. NASA's projected budget request includes $185 million through 1992 for this project, which was proposed in 1984 and adopted by the February 1988 commercial space initiatives.

The seven projects for which private financial participation is sought are:

- The Advanced Solid Rocket Motor production and test facility, that will produce solid rocket motors to support the space shuttle program, and is to be built in Yellow Creek, Mississippi.

- The Space Station Processing Facility, to be built at the Kennedy Space Center, that will first prepare for launch and inspect the elements of the space station, and later perform a similar function for upward-bound and returning cargo.

- The Neutral Buoyancy Laboratory, to be built at the Johnson Space Center, an indoor swimming pool-like structure and support facility that will be used to simulate the Extra Vehicular Activity or "space walking" required in building, operating, and maintaining the space station.

- The Observational Instruments Laboratory, to be built at the Jet Propulsion Laboratory in Pasadena, California, which will be used to develop and assemble observation instruments for a wide array of missions from earth observation to planetary exploration to astronomy.

- The Space Station Flight Telerobotic Servicer, a mobile robotic arm attached to the space station structure that can be used by astronauts within the space station to perform station maintenance and other tasks requiring activity outside the station.

- The Extended Duration Orbiter, a pallet that will hold cooling supplies and hardware, to be carried in the shuttle cargo bay. It will allow the current 10-day limit on shuttle flights to be extended to 14 to 16 days or more.

- A Space Station Docking System to permit the shuttle or other vehicles to join with the space station or other proposed space platforms such as the commercially developed space facility.

Table I lists these projects and the budget authority NASA would have requested in 1990 had it planned to finance them in the traditional way. Estimates are also shown for the total budget authority NASA would require for each project through 1994 were it to proceed in the conventional way. Were the seven projects

TABLE I. COMMERCIAL INITIATIVES IN THE 1990 BUDGET: AVOIDED BUDGET AUTHORITY REQUESTS (In millions of dollars)

Proposal	1990	1990-1994
Construction of Facilities		
Advanced Solid Rocket Motor Production and Test Facility	60	300
Space Station Processing Facility	43	84
Neutral Buoyancy Laborator	30	30
Observational Instruments Laboratory	14	14
Subtotal	147	428
Development Projects		
Space Station Telerobotic Servicer	30	173
Extended Duration Orbiter Kit	27	97
Space Station Docking System	4	76
Subtotal	61	346
Total Initiatives	208	772

SOURCE: National Aeronautics and Space Administration.

financed through private capital markets instead, all or part of the 0.8 billion dollars that would have been required to cover the cost of conventional procurement during the next 5 years would be spread out over the next 15 to 20 years.

NASA has yet to propose the exact terms upon which this type of commercialization would be undertaken, and is in the process of soliciting private-sector interest. Two general types of agreements have been discussed; private financing of facilities and hardware with a leaseback to the government, and service contracts under which the private investor would offer to finance the facility's construction (or hardware production) and, subsequently, operate the facility. In the seven initiatives proposed, the most reasonable assumption is that production, construction, and financing could be separated from operation. Thus, the question of the terms and conditions necessary to enable private financing of production and construction to be cost-effective to the government can be addressed independently of the question whether it would be cost-effective for the government to contract out the operation of a facility or system once it had been built or produced.

Preliminary discussions have been held by both NASA and OMB with parties interested in financing at least one of the hardware projects. The Goddard Space Flight Center is considering amending its Request for Proposal on the space station flight telerobotic system to include private financing options. Requests for information have been released seeking private interest in the Space Station Processing Facility and the Neutral Buoyancy Laboratory. The bidders in the Advanced Solid Rocket Motor competition, which is currently before a source selection board, were requested to provide private construction financing options in their offers tendered in 1988. It is unclear, however, whether the absence of funds in the 1990 budget for government financing of this construction will affect these ongoing deliberations and how, if government financing is chosen, the option will be funded. The Observational Instruments Laboratory is a special case, in which the only offer is expected to come from the California Institute of Technology, a not-for-profit institution that is the home of the Jet Propulsion Laboratory, a federal contract research center devoted to NASA programs.

IV. PRIVATE CONDITIONS AND PUBLIC COSTS

Until NASA finishes gathering information about the terms and conditions necessary to secure private financing, no data will be available for analysis. It can be stated, however, that if the lease or service contract arrangement is to be less expensive to the government than direct procurement, the government will have to share the use and cost of the facilities or hardware with other customers. An example would be a space station facility that the government uses fully during the deployment--thus, a smaller, lower-capacity alternative would not do--but thereafter shares with another user. For the government to realize cost saving from private financing, the lower "principal" payments permitted by sharing with a non-U.S. government user must be sufficient to offset the higher interest cost of borrowing at the private, as opposed to

the government, rate.

The Cost of Private Participation

NASA has performed a preliminary analysis of three of the construction projects proposed for commercialization, comparing the cost of traditional procurement and government ownership with private financing and leaseback to the government. The general results of these analyses hold for the four other projects not included.

The analysis shows that the direct cost to the government would depend on the extent of non-U.S. government demand for the facility or hardware.[9] As illustrated in Table II, commercialization would either cost or save the government money relative to a direct purchase, depending on the assumptions made about non-U.S. government demand. If the government were to lease the entire use of all three facilities, then it would eventually pay a higher price, by over $15 million, than if it purchased the facilities outright, because private financing of the whole facility would be more expensive than government financing. If the government were to lease only 80 percent of the three facilities, however, it could save over $8 million. In this simplest of cases, in order for the government to enjoy a cost saving from leasing, the reduced cost from leasing only part of a facility must be sufficient to offset the cost of higher private-sector financing rates — assumed to be 2.7 percentage points higher in the NASA analysis. According to OMB Circular A-104, a leasing arrangement must pass this type of cost test in order to be preferred to an outright purchase. NASA has indicated, however, that OMB might grant an exception to circular A-104, under the provision of a memorandum that permits exceptions "to lease purchase special purpose facilities, which may be considered on a case-by-case basis, as part of the annual budget review process."[10] Under such an exception NASA would be permitted to go forward with the commercialization options, whether or not they cost the government more than traditional procurement.

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9. The method NASA used to estimate the cost of a direct government purchase as compared with a lease purchase agreement is described in OMB circular A-104. This method compares the present value of a direct government purchase with the present value of the stream of lease payments to be made by the government, plus tax benefits granted the lessor and additional costs incurred as a consequence of private ownership, in this case insurance.

10. Memorandum for Heads of Executive Departments and Agencies from Joseph R. Wright, Acting Director, Office of Management and Budget, October 19, 1988.

TABLE II. DIRECT PROCUREMENT VERSUS LEASING: COST (SAVING) TO THE GOVERNMENT UNDER ALTERNATIVE LEVELS OF GOVERNMENT USE
(In millions of dollars)

Project	100 Percent U.S. Government Lease[a]	80 Percent U.S. Government Lease[a]
Space Station Process Facility	11.0	(4.5)
Observational Instruments Laboratory	2.2	(1.3)
Neutral Buoyancy Tank	3.5	(2.4)

SOURCE: National Aeronautics and Space Administration.

NOTE: The analysis is based on the following assumptions: amortization period, 15 years; discount rate, 9.3 percent; inflation rate, 4.5 percent; construction loan rate, 12.5 percent; long-term amortization rate, 10.5 percent.

a. All numbers are additions to or subtractions from a baseline predicated on direct procurement.

The Non-U.S. Government Market for Space Infrastructure Facilities and Services

Even though NASA could be relieved of the burden of demonstrating that its commercialization initiatives are less costly than direct procurement, the question of commercial demand for the facilities and hardware remains important. Ultimately, a broader market must develop if the National Space Policy objective of a market-driven commercial space sector is to become a reality. Requests for information are a first test of whether a potential commercial demand for space infrastructure exists. If the material submitted to NASA indicates that bidders are willing to bear the risk of commercial failure, and to accept a government lease covering less than the full value of the facility, this will indicate that the policy of commercialization may be a cost-effective step toward a market-driven commercial space sector. If NASA cannot find a bidder willing to bear the risk of the private market, this will suggest that the market's assessment of private demand is negative.

NASA has not estimated the likely sources of commercial demand for the facilities and hardware. However, they include foreign governments, private corporations, and non-profit institutions such as universities and research institutes. Among the four facilities projects neither the solid rocket motor plant nor the observational instruments laboratory is likely to be of interest outside the federal government. The same is true of the telerobotic servicer.

The four other initiatives have more potential. The neutral buoyancy laboratory may attract firms interested in developing undersea technology for petroleum extraction. Shared use of this facility would have to be carefully managed, however. NASA has indicated that even after the launch of the space station, a full-scale model of the habitation and laboratory modules would be kept in the tank to simulate repair operations in case of an emergency during orbit. Private use of this facility would have to be consistent with that safety constraint.

The space station processing facility has a potential commercial market in the processing of cargo. Initially, this market is likely to consist of small experiments that explore the possibility of manufacturing pharmaceutical, semiconductor, or other materials in space. While private firms would bear some of the cost of these experiments, they would probably need full or partial subsidies from the U.S. or foreign governments until profitable space processing ventures are established. To the extent that the cost of subsidizing new space commercial prospects in areas like materials processing would be increased by the need to pay private owners market rates for infrastructure facilities and services, the apparent saving to the U.S. government attributable to shared use leasing would be offset by these higher charges. It is not clear whether NASA has taken account of such higher costs in its proposals to commercialize various rungs of the vertical ladder necessary to develop new space products and services. The higher costs would be incurred both under subsidy and in the early years of unsubsidized commercial activity, should such activity prove viable.

The extended duration orbiter kit could also serve the space experiments market, and be rented to foreign governments or private firms as well as the U.S. government. Extending the duration of a shuttle flight enables more or longer experiments to be performed, increasing the value of the flight. In this case, however, as in that of the space station processing facility, interjecting a private profit-making venture into the set of steps necessary to perform an experiment in space could increase the cost to the government of subsidizing new products and processes.

Finally, the docking module hardware may find a private market if privately owned and operated space platforms come to be. Before that, however, substantial public expenditure on the space platform would be needed.

The most pertinent near-term test of commercialization will come in the terms and conditions private proposals will require. Those that accept the risks of the commercial market will provide the government with more cost-effective facilities and hardware than it can obtain through direct procurement.

Current Proposals and Recent History

NASA has in the past sought to encourage private investment in space infrastructure. CBO is currently reviewing these efforts as a part of a larger study of space commercialization. The record is a mixed one, from the perspectives of both the government and the private investor.

The Tracking and Data Relay Satellite System was initiated as a private investment that relied on the government as its primary customer. The early discussion of the program resembled the current discussion of some of NASA's privatization initiatives. Private bank financing was sought, but when this was not forthcoming, NASA borrowed the funds from the Federal Financing Bank and passed them on to the private investors--a joint venture consisting of communication and aerospace firms. NASA was to be the dominant customer, sharing the use and cost of the satellite system with the private sector. The government would meet its own needs in a cost-effective way and at the same time stimulate private investment in advanced communications satellite applications. The technology was portrayed as not too risky for private investors, as the contractor was moving forward on a design of its own with some commonalities. As an effort to expand private investment in space infrastructure, this venture failed--the system was financed by the government and is currently owned by the government--and the case for its privatization fell apart. The venture proved risky technically in and of itself, and also because it depended on the complementary, but extremely risky, shuttle program for its full realization. The government became and remains the sole user. NASA was forced to assume full responsibility for the loans, and still makes annual payments from appropriated funds to the Federal Financing Bank.

A somewhat more positive case from the government's point of view, is the McDonnell Douglas investment in the upper-stage rocket, the payload assistance module, and its variants (PAM), but this venture probably has not lived up to the expectations of the investor. The product was developed for both the government market and the private satellite market. McDonnell Douglas committed its own funds in anticipation of government business, but also was willing to accept the risk of the commercial market. Sales were initially lower than expected because development of the shuttle took longer than expected, and the flight rate failed to meet advanced projections. Moreover, the demand for communications satellites proved to be substantially less than the industry's consensus forecast. The ban on communications satellite bookings that followed the Challenger accident further diminished the market. Currently, McDonnell Douglas indicates it has not recovered its investment of $150 million in the PAM upper-stage family, 14 years after it initiated the venture. From the government's point of view, however, the PAM case showed that private investment, driven by the expectation of a commercial market, can create a wider choice of space goods than under the traditional NASA approach and at a lower cost to the government.

These cases and others suggest that commercial space activities are still some distance from becoming the major sector of economic activity that space enthusiasts foresee. An implication of this recent history for the 1990 budget initiatives proposed by NASA is that private markets may not come forward with terms and conditions that meet the kind of test suggested by A-104. Should the government choose to go forward regardless, the cost of the lease-purchase options could be viewed as an investment in encouraging private investment in commercial space. The higher cost of using privately owned facilities and hardware could conceivably, further this end in demonstrating the viability of a commercial infrastructure venture. Perhaps, also, the existence of private owners and operators experienced in doing business with the government could smooth the way for other space investors who are unfamiliar with the process.

For the government, the history of commercial space investment suggests that the choice of projects for commercialization must be carefully made. The selection of projects must take into account that private facilities and hardware will invariably be dependent on the highly technical, and often risky, parts of the space infrastructure operated by the government. The private sector's return on its investment will inevitably depend upon having assured access to the public infrastructure. This access is not only constrained by government policy, but also by events unaffected by policy such as technical delays or catastrophes like the Challenger accident. If the recent history of NASA infrastructure efforts is any guide, the schedule for its new initiatives is likely to experience delays similar to those of the past.

V. BUDGET ISSUES

NASA's proposals raise at least two substantial budget issues. The first has to do with the merits of shifting NASA outlays into the future. The second is how the leasing commitments NASA proposes to make should be treated in the budget.

Deferring Outlays into the Future

By commercializing construction and hardware projects, NASA would be able to stretch over the next 15 to 20 years outlays that would be made in the next five years if it acquired the assets in the traditional way. This deferral of outlays is held to be an advantage of the proposal. In general, current budget practice does not see this type of stretch-out as an advantage, particularly if it increases the cost to the government. OMB states in its analysis supporting President Reagan's 1990 budget, "Such arrangements understate the true cost of capital acquisition in the budget and allow the appearance of lower near-term outlays and budget authority at the expense of higher long-term costs."[11]

While the budgetary implications of the current proposals are relatively small, they might establish a precedent for similar proposals in years to come. Locking in future outlays in the form of lease or service contract payments would limit the Congress's options. If at some time the Congress felt it necessary to restrict NASA's budget, the existence of such long-term commitments could conceivably result in cutting high-priority programs rather than low-priority programs. NASA experience with the Tracking and Data Relay Satellite (TDRS) program highlights the difficulties of carrying these required annual payments. The annual payment to the Federal Financing Bank for the TDRS loan is $227.2 million, which is provided through appropriations and due on October 1 each year. In 1987, NASA missed the payment altogether and made the payment in installments instead in 1988. This restructuring of the repayments has increased the total interest due on the loan by over $100 million.

The shifting of outlays into the 1990s could compound the projected growth in NASA's overall costs. CBO analyzed these costs in a 1988 report, and found that NASA's budget authority requirement could grow to $18.4 billion by 1994 (in 1994 dollars), without any new initiatives such as a dramatic increase in Earth monitoring, a return to the moon, or a manned mission to Mars.[12] The President's budget, which does not include new project starts in the period 1991 through 1994 (the CBO

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11. "Federal Credit Programs," Special Analyses. Budget of the United States Government. Fiscal Year 1990. p. F-53.

12. Congressional Budget Office, The NASA Program in the 1990s and Beyond. (May 1988), p. xv.

analysis did) shows NASA's nominal dollar budget growing from $13.3 billion in 1990 to $16.7 billion in 1994.[13] When these growing program costs are considered against the background of the current effort to reduce the federal deficit, the argument for shifting expenses to the future loses much of its force.

Scoring Leases

The budgetary treatment (scoring) of initiatives such as those being considered by NASA depends on the language authorizing them. As noted, NASA and OMB have not officially presented the exact terms for the seven proposals and this makes it impossible to say with any certainty how the proposals would be scored.

In general, the treatment of leases is governed by the Anti-Deficiency Act (31 U.S.C. 1341), which requires the lessee agency to obligate sufficient funds to cover the federal government's maximum current liability, as provided through appropriations acts. If sufficient funding is not provided through appropriations, then the lease can be scored as direct spending, as Congress may provide by law, with budget authority sufficient to cover future obligations recorded when the lease is signed, and the resulting outlays appearing when the lease payments are made. This scenario is similar to the treatment of subsidized housing contracts, which are multiyear rental assistance agreements: budget authority sufficient to cover the future stream of assistance payments is recorded when the contracts are signed.

Some leasing arrangements, on the other hand, do not commit the federal government to future obligations, and therefore do not require advance funding. Two lease-purchase arrangements authorized during the 100th Congress fall into this category. In these cases, both involving the construction of new office buildings, the authorizing legislation specified that the obligation of funds for lease payments may only be made on an annual basis, and would be subject to appropriations.[14] Other issues affect this determination however, such as the agency's liability associated with terminating the lease. These issues are usually specific to each lease and cannot be addressed until the authorizing language is presented, establishing the legal framework of the actual lease entered into.

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13. Budget of the United States. Fiscal Year 1990. pp. 10-15.

14. The two bills referred to here are S. 1550, the Federal Triangle project authorized by the Senate Committee on Environment and Public Works on July 29, 1987, and S. 1934, the Judiciary Office Building Development Act, as ordered reported by the same committee on April 22, 1988.